

4. The method as claimed in any one of claims 1 to 3, wherein different colour channels in said test pattern image and said second image are separately registered and analysed.

5 5. The method as claimed in any one of claims 1 to 4, wherein said region based mapping uses overlapping blocks of image data from said test pattern image and said second image.

6. The method as claimed in any one of claims 1 to 5, wherein said analysis features
10 are said alignment features.

7. The method as claimed in any one of claims 1 to 6 wherein said region based matching is block based correlation.

15 8. The method as claimed in any one of claims 1 to 6 wherein said registering step comprises the sub-steps of:

performing block based correlation on said test pattern image and said second image to determine a displacement map for mapping pixels of said test pattern image to corresponding pixels of said second image;

20 interpolating said displacement map to form a distortion map; and
warping said test pattern image using said distortion map.

9. The method as claimed in any one of claims 1 to 8 wherein said measuring step includes comparing pixel values of corresponding pixels in said test pattern image and
25 second image after said images have been registered.

10. The method as claimed in any one of claims 1 to 9 wherein said test pattern image is generated by the steps of:

- (a) dividing an image area into a predetermined number of areas;
- 5 (b) dividing each of said areas into smaller areas;
- (c) within each area, assigning properties to at least one of said smaller areas, and designating the remainder of said smaller areas as areas;
- (d) generating pixel values for said at least one of said smaller areas, said pixel values being in accordance with said properties;
- 10 (e) repeating steps (b) to (d).

11. The method as claimed in claim 10, wherein said properties are randomized.

12. The method as claimed in claim 10 or 11, wherein said at least one of said smaller
15 areas is selected randomly.

13. The method as claimed in any one of claims 10 to 12, wherein said properties are one or more of:

- colour;
- 20 slowly varying colour;
- pattern with predetermined frequency distribution;
- pattern with predetermined orientations; and
- pseudo-random noise.

25 14. The method as claimed in claim 1 wherein said test pattern is generated through the

steps of:

- (a) dividing an area into a predetermined number of smaller areas;
- (b) selecting at least one of said smaller areas;
- (c) generating pixel values for the selected smaller areas, said pixel values being
5 in accordance with assigned properties;
- (d) designating each of the unselected smaller areas as areas; and
- (e) repeating steps (a) to (d) iteratively for each of the areas.

10 15. The method as claimed in claim 14, wherein said properties are randomized.

16. The method as claimed in claim 14 or 15, wherein said at least one of said smaller
areas is selected randomly.

17. The method as claimed in any one of claims 14 to 16, wherein said properties are
15 one or more of:

colour;

slowly varying colour;

pattern with predetermined frequency distribution;

pattern with predetermined orientations; and

20 pseudo-random noise.

18. A method of analysing images, said method comprising the steps of:

receiving first and second images, said second image being a distorted version of
said first image;

25 labelling pixels of said first image with pixel labels;

means for maintaining a test pattern image, said test pattern image comprising alignment features and image analysis features;

said printer for printing said test pattern image to form a test chart;

a calibrated imaging device for imaging said test chart to form a second image;

5 means for registering said test pattern image and said second image using region based matching operating on said alignment features; and

means for measuring said performance parameters by analysing said image analysis features.

10 22. Apparatus as claimed in claim 20 wherein said means for maintaining a test pattern comprises:

means for dividing an area into a predetermined number of smaller areas;

means for selecting at least one of said smaller areas;

15 means for generating pixel values for the selected smaller areas, said pixel values being in accordance with assigned properties;

means for designating each of the unselected smaller areas as areas; and

means for iteratively passing control to said means for dividing, said means for selecting, said means for generating pixel values, and said means for designating.

20 23. Apparatus for analysing images, said apparatus comprising:

means for receiving first and second images, said second image being a distorted version of said first image;

means for labelling pixels of said first image with pixel labels;

25 means for determining distortion parameters for aligning said first image with said second image;

measuring said performance parameters by analysing said image analysis features.

26. A computer readable medium as claimed in claim 24, wherein said test pattern is generated through the steps of:

- 5 (a) dividing an area into a predetermined number of smaller areas;
- (b) selecting at least one of said smaller areas;
- (c) generating pixel values for the selected smaller areas, said pixel values being in accordance with assigned properties;
- (d) designating each of the unselected smaller areas as areas; and
- 10 (e) repeating steps (a) to (d) iteratively for each of the areas.

27. A computer readable medium comprising a computer program for analysing images, said computer program when executed on a computing device performs the steps of:

- 15 receiving first and second images, said second image being a distorted version of said first image;
 - labelling pixels of said first image with pixel labels;
 - determining distortion parameters for aligning said first image with said second image;
 - 20 warping at least said pixel labels using said distortion parameters; and
 - associating said pixel labels with corresponding pixels in said second image,
- wherein said labels provide information on a state of pixels in said second image before distortion.